WHAT IS CLAIMED IS:

1. A method of encoding input information of k-bit_ and generating a codeword with length $N > (2^k-1)$, comprising the steps of:

encoding the input information using a (r, k) simplex code and generating a sequence of code symbols of length **r** ($r=2^k-1$);

repeating the sequence of code symbols t times ($t = \left\lfloor \frac{N}{r} \right\rfloor + 1$); and

puncturing A times (A = rt-N) on the t repeated code symbol sequences so that the resulting codes have length N.

2. The method of claim 1, wherein the punctured symbols are distributed uniformly across the repeated code symbol sequences.

3. The method of claim 1, wherein the punctured symbols are confined to the t^{th} repeated code symbol sequence.

4. An apparatus for encoding input information of k-bit_ sequence and generating a codeword with length $N > (2^k-1)$, comprising:

an encoder for encoding the input information using an (r, k) simplex code and generating a sequence of code symbols of length **r** ($r=2^k-1$);

a repeater for repeating the sequence of code symbols t times ($t = \left\lfloor \frac{N}{r} \right\rfloor + 1$); and

a puncturer for puncturing A times (A = rt-N) on the **t** repeated code symbol sequences so that the resulting codes have length N.

5. The apparatus of claim 4, wherein the punctured symbols are distributed uniformly across the repeated code symbol sequences.

6. The apparatus of claim 4, wherein the punctured symbols are confined to the t^{th} repeated code symbol sequence.

7. An encoding method comprising the steps of:

encoding input information using a (7, 3) simplex code and generating a sequence of code symbols of length 7;

repeating the sequence of code symbols **t** times ($t = \left\lfloor \frac{N}{r} \right\rfloor + 1$); and

performing puncturing A times (A = rt-N) on the **t** repeated code symbol sequences in a predetermined puncturing pattern so that the resulting codes have length N that is not a multiple of 7.

8. The encoding method of claim 7, wherein if the remainder of dividing the N by 7 is 1, the predetermined puncturing pattern is set to puncture six arbitrary symbols.

9. The encoding method of claim 7, wherein if the remainder of dividing the N by 7 is 2, the predetermined puncturing pattern is set to puncture five arbitrary symbols.

10. The encoding method of claim 7, wherein if the remainder of dividing the N by 7 is 3, the predetermined puncturing pattern is set to puncture the third, fifth, sixth, and seventh symbols of the t^{th} repeated code symbol sequence.

11. The encoding method of claim 7, wherein if the remainder of dividing the N by 7 is 4, the predetermined puncturing pattern is set to puncture the third, fifth, and sixth symbols of the t^{th} repeated code symbol sequence.

12. The encoding method of claim 7, wherein if the remainder of

dividing the N by 7 is 5, the predetermined puncturing pattern is set to puncture two arbitrary symbols.

13. The encoding method of claim 7, wherein if the remainder of dividing the N by 7 is 6, the predetermined puncturing pattern is set to puncture one arbitrary symbol.

14. The encoding method of claim 7, wherein if the remainder of dividing the N by 7 is 3, the predetermined puncturing pattern is set to puncture the $(n1\times7+3)^{th}$, $(n2\times7+5)^{th}$, $(n3\times7+6)^{th}$, and $(n4\times7+7)^{th}$ symbols of the repeated code symbols ($0 \le n1, n2, n3, n4 \le (t-1)$).

15. The encoding method of claim 7, wherein if the remainder of dividing the N by 7 is 4, the predetermined puncturing pattern is set to puncture the $(n1\times7+1)^{th}$, $(n2\times7+2)^{th}$, and $(n3\times7+3)^{th}$ symbols of the repeated code symbols ($0\le n1,n2,n3\le(t-1)$).